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MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER HOLLOWAY III, EDWIN C	
			ART UNIT 2612	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/506,329

**Applicant(s)**

YOON ET AL.

**Examiner**

Edwin C. Holloway, III

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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**EXAMINER'S RESPONSE**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7-12-07 has been entered. Claims 1-6 and 8-11 are pending. The examiner has considered the new presentation of claims and applicant's arguments in view of the disclosure and the present state of the prior art. And it is the examiner's position that claims 1-6 and 8-10 are unpatentable for the reasons set forth in this Office action:

***Claim Rejections - 35 USC § 102 & 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houggy (US 5,838,226) and MacFadyen (US 5,101,191) and Venners (US 4855730).

Referring to claim 1, Houggy's system 10, as shown in Figs. 1 and 9, comprises (a) master control device 20 and/or master

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unit 30 (i.e., first home appliances), each having a master function of turning on/turning off electric lamp 54 via dimmer 50 (see Col. 11, lines 66-67; Col. 12, lines 1-46 and 56-60; Col. 17, lines 7-21 and 37-67; Col. 18, lines 1-3; Col. 24, lines 64-67; and Col. 25, lines 1-2 ); (b) at least one dimmer 50 (i.e., a second home appliance) having a slave function of responding to a command transmitter by master control device 20 and/or master unit 30 and transmitting its status to master control device 20 and/or master unit 30 (see Fig. 2; Col. 12, lines 56-67; and Col. 13, lines 1-13 and 36-40); and (c) radio frequency (RF) communication line paths, as indicated by the zigzag lines in Fig. 1, for communication only between master control device 20 and dimmer 50 or between master unit 30 and dimmer 50 when repeater 40 is unnecessary in the system (see Col. 12, lines 16-19).

Regarding claim 1, Houggy omits teaching the claim's limitation of a communication line path for communication to a next second home appliance only after transmitting at least one packet to the second home appliance and receiving a reply of the at least one packet from the second home appliance

In an analogous art, MacFadyen teaches an automated system, as shown in Fig. 1, comprising (a) a regional controller having the master function of overall coordination and monitoring of

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the appliance network (see Col. 2, lines 45-51 and Col. 3, lines 44-47 and 56-60); (b) a plurality of appliances 11 having a slave function (see Col. 2, lines 52-64 and Col. 3, lines 44-60); and (c) a communications link or communications bus connecting the regional controller and appliances 11 (see Col. 3, lines 1-11 and 56-60). As called for in claim 7, MacFadyen teach that the communication protocol between a regional controller and an appliance is as follows: (1) the regional controller transmits a packet to an appliance (see Col. 3, lines 47-52); (2) the local area network (LAN) interface associated with the appliance examines the address in the packet for a match, delivers the packet to the appliance if there is a match, and transmits an ACK packet (see Col. 3, lines 6-14); and (3) the regional controller receives the ACK packet or retransmits the data packet if the regional controller fails to receive an ACK packet within a specified time period (see Col. 3, lines 54-56). In other words, the regional controller first transmits a data packet to an appliance and receives an ACK packet from the appliance before starting communication with another appliance.

Further, in an analogous audio/video system, Venners discloses with a master (system controller) sending a sequences of commands to a plurality of devices (col. 5 line 10-12). A command message is transmitted and a next command in the

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sequence is not transmitted until of a reply message with proper status is received. Therefore the next device in the sequence of devices cannot be controlled until a command message is transmitted and a reply message is received (col. 4 line 22 - col. 6 line 8, fig. 2). Venners does not expressly refer to the messages as packets.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Houggy's computers 10 and 12 and devices 18 and 20 as taught by MacFadyen and Venners because a computer 10 (or computer 12) that transmits and receives on packet to and from one device 18 (or device 20) before starting communication with the next device avoids collisions and improves system reliability by ensuring that the transmitted packet has been properly received by a device prior to communicating with another device (see MacFadyen, Col. 3, lines 44-60) and to assure that the first command of a sequence is properly executed before a second command (for another device is a sequence of devices) is transmitted to avoid conflict between commands (see Venners, col. 5 and abstract).

Regarding claim 6, communication between master control device 20 (or master unit 30) and dimmer 50 is half-duplex (see Fig. 18 and Col. 25, lines 34-63).

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4. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madany (US 5,922,050) and MacFadyen (US 5,101,191) and Venners (US 4855730).

Referring to claim 1, Madany teaches a system, as shown in Figs. 1 and 7, comprising (a) computers 10/100 and 12/102 that function as masters (see Col. 3, lines 12-14 and 36-38; Col. 4, lines 43-47; Col. 5, lines 45-49; Col. 6, lines 36-42; and Col. 7, lines 33-65); (b) devices 16, 18, and 20, which include TV 104, VCR 106, coffee maker 116 (i.e., home appliances), etc., that function as slaves (see Col. 3, lines 41-46; Col. 4, lines 24-33; Col. 6, lines 28-42; and Col. 7, lines 34-44); and (c) network 14 or house wiring 103 (i.e., communication lines) between computers 10/100 and 12/102 and the devices (see Col. 3, lines 2-23 and 31-33; Col. 6, lines 13-15; and Col. 7, lines 29-44). Madany teaches that network 14 may be a single point-to-point (PTP) communication link between a device and a computer (see Col. 3, lines 29-31). When network 14 is a single PTP communication link between a device and a computer, the PTP communication link is a communication link path for communication only between the device and the computer. In addition, Madany teaches that the computer (i.e., a first home appliance) executes a program and provides control signals to a device, which receives and implements the control signals (see

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Col. 3, lines 12-14); thus Madany's computer 10 or 12 controls the device's slave function, such as the slave function to respond to the computer's status request (see Col. 6, lines 28-33).

Regarding claim 1, Madany omits teaching the claim's limitation of a communication line path for communication to a next second home appliance only after transmitting at least one packet to the second home appliance and receiving a reply of the at least one packet from the second home appliance

In an analogous art, MacFadyen teaches an automated system, as shown in Fig. 1, comprising (a) a regional controller having the master function of overall coordination and monitoring of the appliance network (see Col. 2, lines 45-51 and Col. 3, lines 44-47 and 56-60); (b) a plurality of appliances 11 having a slave function (see Col. 2, lines 52-64 and Col. 3, lines 44-60); and (c) a communications link or communications bus connecting the regional controller and appliances 11 (see Col. 3, lines 1-11 and 56-60). As called for in claim 7, MacFadyen teach that the communication protocol between a regional controller and an appliance is as follows: (1) the regional controller transmits a packet to an appliance (see Col. 3, lines 47-52); (2) the local area network (LAN) interface associated with the appliance examines the address in the packet for a



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match, delivers the packet to the appliance if there is a match, and transmits an ACK packet (see Col. 3, lines 6-14); and (3) the regional controller receives the ACK packet or retransmits the data packet if the regional controller fails to receive an ACK packet within a specified time period (see Col. 3, lines 54-56). In other words, the regional controller first transmits a data packet to an appliance and receives an ACK packet from the appliance before starting communication with another appliance.

Further, in an analogous audio/video system, Venners discloses with a master (system controller) sending a sequences of commands to a plurality of devices (col. 5 line 10-12). A command message is transmitted and a next command in the sequence is not transmitted until of a reply message with proper status is received. Therefore the next device in the sequence of devices cannot be controlled until a command message is transmitted and a reply message is received (col. 4 line 22 - col. 6 line 8, fig. 2). Venners does not expressly refer to the messages as packets.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Houggy's computers 10 and 12 and devices 18 and 20 as taught by MacFadyen and Venners because a computer 10 (or computer 12) that transmits and receives on packet to and from

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one device 18 (or device 20) before starting communication with the next device avoids collisions and improves system reliability by ensuring that the transmitted packet has been properly received by a device prior to communicating with another device (see MacFadyen, Col. 3, lines 44-60) and to assure that the first command of a sequence is properly executed before a second command (for another device is a sequence of devices) is transmitted to avoid conflict between commands (see Venners, col. 5 and abstract).

Regarding claim 2, Madany's computers are first home appliances that communicate with door lock 110 (see Col. 3, lines 12-14 and 36-38; Col. 4, lines 43-47; Col. 5, lines 45-49; Col. 6, lines 36-42; and Col. 7, lines 33-65). Door lock 110 is understood to be an exterior appliance since the computer activates light switch 108 to turn on the lights in the room next to the door being unlocked (see Col. 7, lines 58-62), thereby providing a user with light as he/she enters the house.

12. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madany (US 5,922,050) and MacFadyen (US 5,101,191) and Venners (US 4855730) as applied to claim 1 above, and further in view of Fischer et al. (US 5,008,879).

Regarding claims 3-5, claims 3 and 4 require the first and

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second home appliances to have an application layer, a data link (i.e., data connecting) layer, and a physical layer. These layers are three of the seven layers of the Open Systems Interconnection (OSI) Reference Model and represent different categories of the communications process between different systems. According to the OSI model, the application layer contains functions for particular applications services, the data link layer is concerned with procedures and protocols for operating the communications lines and detects and corrects message errors, and the physical layer deals with the physical means of sending data over lines. As called for in claim 3, Madany's computers 10 and 12 (i.e., masters) transmit commands to devices 16-20 (i.e., slaves) (see Col. 6, lines 36-42). In one example, Madany teaches that computer 10 or 12 sends a command to a device to cause the device to change its volume (see Col. 6, lines 36-42). It is understood that (1) computer 10 or 12's application layer produces the command, (2) the "change volume" command includes some factor code or argument to indicate how much to change the volume, and (3) computer 12 or 12's data connecting layer forms the command, as called for in claim 3. Madany also teaches that the device updates its status after executing the command (see Col. 6, lines 39-42); thus the device's application layer returns an execution result of the

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command upon receiving a status request from a master, and the device's data connecting layer sends the received command to the application layer and forms a return packet, (see Col. 6, lines 27-33), as called for in claim 4. Madany, however, fails to expressly teach the following: (1) computer 10 or 12's application layer analyzing a return packet (as called for in claim 3); (2) computer 10 or 12's data connecting layer forming a data packet, producing an error checking code, and repeatedly transmitting the packet if a return packet is a NAK or is not found (as called for in claim 3); and (3) computer 10 or 12's physical layer checking an address of the packet produced in the data connecting layer, determining whether a connection line path between computer 10 or 12 and a device 9 is vacant to transmit the packet, and delivering the transmitted packet to the data connecting layer. Likewise, Madany fails to expressly teach (4) a device's data connecting layer transmitting a NAK packet if an error is found in the received packet and producing an error checking code (as called for in claim 4); (5) the device's physical layer checking an address of the packet produced in the data connecting later, determining whether a connection line path between computer 10 or 12 and a device 9 is vacant to transmit the packet, and delivering the transmitted packet to the data connecting layer (as called for in claim 4);

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and (5) the device's data connecting layer and physical layer is formed as one module (as called for in claim 5).

In an analogous art, as called for in claim 3, MacFadyen teaches that a master (such as a regional controller or an appliance 11 functioning as a master) sends a command packet, which includes a command code, to a slave (such as another appliance 11) and that the slave sends a return packet, which is an acknowledge (ACK) packet, to the sender, causing the master to analyze the return packet in order to determine if retransmission of the command packet is necessary (see Col. 3, lines 1-14 and 32-60). The functions of generating a command code and analyzing the return packet occur at (a) the application layer. MacFadyen also teaches that the master (1) generates parity verification and check sums (i.e., error checking code) (see Col. 3, lines 49-52); (2) generates a packet that contains a slave's address, the command code, and the error checking code (see Col. 3, lines 8-11 and 38-56; and Col. 4, lines 34-36); and (3) repeatedly resends the command packet if an ACK packet is not received within a specified time period (see Col. 3, lines 38-56). These functions occur at (b) the data link layer. In addition, MacFadyen discloses that the master (1) checks the address of the return packet (see Col. 3, lines 8-11); (2) determines whether a communication line path

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between the master and the slave is vacant to transmit the command packet (see Col. 4, lines 16-18 and 25-45); and (3) delivers the return packet to the data link layer (see Col. 3, lines 8-14 and 38-60). These functions occur at (c) the physical link layer. Regarding claim 4, MacFadyen teaches that a slave carries out a command contained in a received command packet (see Col. 2, lines 52-68 and Col. 3, lines 36-44). This function occurs at (a) the application layer. MacFadyen's slave also (1) sends a received command packet to the slave's application layer (see Col. 3, lines 36-44); (2) generates an ACK packet if the received command packet is free of errors (see Col. 3, lines 49-56); (3) generates an error checking code (see Col. 3, lines 49-52); and (4) forms a return packet containing the master's address (i.e., the recipient), the slave's address (i.e., the sender), the ACK packet, and the error checking code (see Col. 3, lines 8-11 and 38-56; and Col. 4, lines 34-36). These functions occur at (b) the data link layer. Finally, MacFadyen teaches that the slave (1) checks the address of the received command packet (see Col. 3, lines 8-11); (2) determines whether a communication line path between the master and the slave is vacant to transmit the reply packet (see Col. 4, lines 16-18 and 25-45); and (3) delivers the received command packet to the data link layer (see Col. 3, lines 8-14 and 38-60).

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These functions occur at (c) the physical link layer.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madany's masters and slaves as taught by MacFadyen because error are reduced, thereby improving system reliability, when (1) computer 10 or 12's application layer analyzes a return packet (as called for in claim 3); (2) computer 10 or 12's data connecting layer forms a data packet, produces an error checking code, and repeatedly transmits the packet if a return packet is a NAK or is not found (as called for in claim 3); (3) computer 10 or 12's physical layer checks an address of the packet produced in the data connecting layer, determines whether a connection line path between computer 10 or 12 and a device 9s vacant to transmit the packet, and delivers the transmitted packet to the data connecting layer; (4) a device's data connecting layer transmits a NAK packet if an error is found in the received packet and produces an error checking code (as called for in claim 4); and (5) the device's physical layer checks an address of the packet produced in the data connecting later, determines whether a connection line path between computer 10 or 12 and a device 9 is vacant to transmit the packet, and delivers the transmitted packet to the data connecting layer (as called for in claim 4).

The above combination, however, fails to teach (1) the master's physical layer checking the address of a packet provided by the master's data link layer (as called for in claim 3), (2) the slave's data link layer generating a NAK packet if an error is found in the command packet (as called for in claim 4); and (3) the slave's data link layer and physical layer being in one module (as called for in claim 5).

In another analogous art, Fischer teaches a LAN with multiple operational capabilities, as shown in Fig. 1, comprising (a) enhanced and basic nodes that function as both source nodes (i.e., masters) and destination nodes (i.e., slaves) (see Col. 4, lines 51-67 and Col. 5, lines 12-26); and (b) medium 42 (i.e., communication line) that connects all the nodes (see Col. 4, lines 55-60). As called for in claim 3, Fischer's master performs a plurality of functions: (a) producing a data, such as command codes to control a sensor or an actuator, to be transmitted to a slave (see Figs. 5 and 6; Col. 6, lines 53-61; Col. 7, lines 44-46; and Col. 8, lines 49-62) and analyzing a return packet, such as ACK packet, a NAK packet, or an enhanced response (XRSP) packet (see Figs. 14, and 19; Col. 7, lines 44-46; Col. 16, lines 46-55; Col. 20, lines 32-49; Col. 23, lines 31-35 and 51-61; and Col. 27, lines 29-38), wherein both functions occur at the master's application



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layer; (b) generating a frame (i.e., packet of data) to be transmitted (see Figs. 5 and 6; Col. 7, lines 29-39; and Col. 8, lines 49-62) and generating an error checking code (see Fig. 6, FCS 102; Fig. 20, FCS; Col. 7, lines 36-39; Col. 12, lines 24-26; Col. 16, lines 37-39; and Col. 21, lines 8-13), wherein both functions occur at the master's data link layer; and (c) checking the address of the frame to be transmitted to a slave by comparing the address with those in capability table 84 (see Col. 7, lines 7-27; Col. 8, lines 49-55; and Col. 9, lines 20-29 and 62-65), determining whether a communication line path is vacant to transmit the frame (see Col. 7, lines 7-27 and Col. 28, lines 3-7), and delivering a return packet (such as an ACK, NAK, or XRSP packet) to the data link layer (see Col. 7, lines 7-44; Col. 9, lines 11-15; Col. 16, lines 46-55; Col. 20, lines 32-49; Col. 23, lines 31-35 and 51-61; and Col. 27, lines 29-38), wherein all three functions occur at the physical layer. Per Fischer, the master checks the slave's address with capability table 84 in order to determine the highest data rate that the slave is capable of receiving (see Col. 9, lines 20-27 and 62-65). As called for in claim 4, Fischer's slaves also have a physical layer, a data link layer, and an application layer (see Col. 7, lines 3-46 and Col. 8, lines 49-65). Per Fischer, each slave (a) carries out a command of a received

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command packet (see Figs. 5 and 6; Col. 6, lines 53-61; Col. 7, lines 44-46; and Col. 9, lines 11-15), which occurs at the application layer; (b) sends the received command packet to the application layer (see Col. 6, lines 57-61; Col. 7, lines 42-46; and Col. 9, lines 11-15), generates an ACK or an XRSP if the received command packet is errorless (see Col. 7, lines 29-42; Col. 8, lines 59-62; Col. 16, lines 46-48; and Col. 20, lines 32-49), and generates an ACK frame as shown in Fig. 14 or an XRSP frame as shown in Fig. 19 (see Col. 7, lines 29-42; Col. 8, lines 59-62; Col. 16, lines 46-48; and Col. 20, lines 32-49), wherein these functions occur at the data link layer; and (c) checking the address of the frame to be transmitted to a slave by comparing the address with those in capability table 84 (see Col. 7, lines 29-44; Col. 8, lines 49-55; and Col. 9, lines 20-29 and 62-65), determining whether a communication line path is vacant to transmit the frame (see Col. 7, lines 7-27; Col. 8, lines 62-65; and Col. 28, lines 3-7), and delivering a return packet (such as an ACK, a NAK, or an XRSP) to the data link layer (see Col. 7, lines 7-44; Col. 8, lines 59-65; Col. 23, lines 31-61; and Col. 28, lines 3-7), wherein all three functions occur at the physical layer. Regarding claim 5, Fischer teaches that network protocol controller 70 (i.e., one module) is the preferred means for achieving the physical layer

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and the data link layer functionality (see Col. 8, lines 53-55). When Fischer's enhanced nodes communicate with each other, the slave sends an XRSP frame to acknowledge (XRSP with successful delivery status) or negatively acknowledge (XRSP with unsuccessful delivery status) the receipt of the packet (see Col. 20, lines 32-49 and Col. 23, lines 31-35). An XRSP frame with successful delivery status is understood to be an ACK, and an XRSP with unsuccessful delivery status is understood to be a NAK.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify master of the combination applied above as taught by Fischer because a master's physical layer that checks the address of a packet provided by the master's data link layer prior to transmission enables the master to determine the slave's highest data rate and to transmit the command packet at that rate, thereby enabling Madany's network 14 to support devices having different communication capabilities (see Fischer, Col. 2, lines 10-15 and Col. 6, lines 7-14). In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the slave as taught by Fischer because a slave's data link layer that generates an ACK or a NAK clearly indicates (1) if the

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command packet was received properly (which is represented by an ACK), (2) if the command packet was received but with errors (which is represented by a NAK), or (3) if the command packet was not received at all, thereby allowing the master to identify the situation and take appropriate actions (see Fischer, Col. 23, lines 51-61). Furthermore, by having slave's data link layer and physical layer in one module and the second home appliance's application layer in the appliance's host processor provides the second home appliance with additional processing resources (see Fischer, Col. 8, lines 48-65).

5. Claim 8 and 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (US 5,008,879) in view of Madany (US 5,922,050) MacFadyen (US 5,101,191) and Venners (US 4855730).

Referring to claim 8, Fischer teaches a LAN with multiple operational capabilities, as shown in Fig. 1, comprising enhanced and basic nodes that function as both source nodes (i.e., masters) and destination nodes (i.e., slaves) (see Col. 4, lines 51-67 and Col. 5, lines 12-26); and medium 42 (i.e., communication line) that connects all the nodes (see Col. 4, lines 55-60). Per Fischer, enhanced and basic nodes all have common operational capabilities, such as a data transfer rate of

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2.5 million bits per second (see Col. 5, lines 65-67 and Col. 6, lines 42-47). Enhanced nodes, on the other hand, also have enhanced operational capabilities, such as a data transfer rate of 20 million bits per second (see Col. 5, lines 67-68 and Col. 6, lines 1-7 and 42-47). In addition, frames communicated between a basic node and an enhanced node or between two basic nodes differ from frames communicated between two enhanced nodes (see Fig. 13, basic data packet; Fig. 20, data packet to an enhanced node; Col. 16, lines 13-41; Col. 20, lines 51-68; and Col. 21, lines 1-17). In other words, enhanced nodes communicate with each other using a data rate of 20 million bits per second and frame lengths of 29 symbols plus the data bytes with imbedded enhanced calibration symbol units (XCSUs) (see Col. 6, lines 42-47; Col. 20, lines 51-68; and Col. 21, lines 1-13), whereas basic nodes communicate with each other or with enhanced nodes using a data rate of 2.5 million bits per second and frame lengths of  $188+22n$  or  $210+22n$  symbols, where  $n$  is the number of data bytes in the packet (see Col. 6, lines 42-27 and Col. 16, lines 13-16). Fischer's method comprises a source node (hereinafter referred to as a "master") performing the following functions: (1) reading information of a destination node (hereinafter referred to as a "slave") from configuration table 84 to determine if the slave is a basic node or an enhanced

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node, thereby enabling the master to set the highest data rate (i.e., communication speed) and packet length according to the information (see Col. 9, lines 20-29 and 62-65; Col. 16, lines 13-41 and 63-68; and Col. 20, lines 51-68); (2) forming a basic data packet frame (PAC) if the slave is a basic node or an enhanced data packet frame (XPAC) if the slave is an enhanced node (see Col. 8, lines 59-62; Col. 16, lines 13-41 and 63-68; and Col. 20, lines 51-68); and (3) transmitting the data packet to the slave at the preset data rate (see Col. 7, lines 7-10; Col. 8, lines 62-65; and Col. 9, lines 20-29 and 62-65).

Because Fischer teaches that each node, whether basic or enhanced, includes sensors or actuators (see Col. 6, lines 57-61); thus it is understood that PACs or XPACs contains a command when a master communicates with a slave that is a sensor or an actuator. Fischer's method also comprises the slave performing the following functions: (1) receiving a master's packet (i.e., a PAC or XPAC) that contains the slave's address (see Col. 5, lines 12-16; Col. 7, lines 29-46; and Col. 9, lines 11-15); (2) checking the received packet for errors (see Col. 16, lines 42-48 and Col. 20, lines 32-49); (3) performing the command in the received packet (see Col. 6, lines 57-61 and Col. 12, lines 34-39); (4) generating an ACK (if the slave is a basic node) or an XRSP with successful delivery status (if the slave is an

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enhanced node) if the received packet is errorless (see Col. 16, lines 42-48; Col. 20, lines 32-49; and Col. 23, lines 31-35); (5) generating an XRSP with unsuccessful delivery status (if the slave is an enhanced node) if the received packet has errors (see Col. 20, lines 32-49 and Col. 23, lines 31-35); and (6) transmitting the XRSP to the master (see Col. 7, lines 39-42; Col. 8, lines 59-62; Col. 16, lines 42-48; Col. 23, lines 31-35). Finally, Fischer's method comprises the master performing the following functions: (1) checking whether the ACK or XRSP packet is received (see Col. 23, lines 31-61); and (2) transmitting the next packet or retransmitting the first packet if an XRSP with unsuccessful delivery status has been received from the slave (see Col. 23, lines 47-61). Fischer, however, fails to teach that the master is a first home appliance and that the slave is a second home appliance.

In an analogous art, as explained in the previous 35 USC §102(b) rejection of claims 1 and 2, Madany's devices only transmit its identity, its applet, and its status to computer 10 or 12 (see Fig. 4, steps 56 and 64; Fig. 5, steps 74 and 83). In other words, Madany's device are unable to transmit control commands to control computer 10 or 12.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to

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modify Fischer's system and method as taught by Madany because a master that is a first home appliance and a slave that is a second home appliance enables Fischer's system and method to provide a home appliance coordination network with computers that can control a plurality of low-cost devices, such as TV 104, VCR 106, light switch 108, etc. (see Madany, Fig. 7 and Col. 2, lines 11-23).

Further regarding claim 8, The combination applied above lacks the claim's limitation of a communication line path for communication to a next second home appliance only after transmitting at least one packet to the second home appliance and receiving a reply of the at least one packet from the second home appliance

In an analogous art, MacFadyen teaches an automated system, as shown in Fig. 1, comprising (a) a regional controller having the master function of overall coordination and monitoring of the appliance network (see Col. 2, lines 45-51 and Col. 3, lines 44-47 and 56-60); (b) a plurality of appliances 11 having a slave function (see Col. 2, lines 52-64 and Col. 3, lines 44-60); and (c) a communications link or communications bus connecting the regional controller and appliances 11 (see Col. 3, lines 1-11 and 56-60). As called for in claim 7, MacFadyen teach that the communication protocol between a regional



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controller and an appliance is as follows: (1) the regional controller transmits a packet to an appliance (see Col. 3, lines 47-52); (2) the local area network (LAN) interface associated with the appliance examines the address in the packet for a match, delivers the packet to the appliance if there is a match, and transmits an ACK packet (see Col. 3, lines 6-14); and (3) the regional controller receives the ACK packet or retransmits the data packet if the regional controller fails to receive an ACK packet within a specified time period (see Col. 3, lines 54-56). In other words, the regional controller first transmits a data packet to an appliance and receives an ACK packet from the appliance before starting communication with another appliance.

Further, in an analogous audio/video system, Venners discloses with a master (system controller) sending a sequences of commands to a plurality of devices (col. 5 line 10-12). A command message is transmitted and a next command in the sequence is not transmitted until of a reply message with proper status is received. Therefore the next device in the sequence of devices cannot be controlled until a command message is transmitted and a reply message is received (col. 4 line 22 - col. 6 line 8, fig. 2). Venners does not expressly refer to the messages as packets.

Therefore, it would have been obvious to one having

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ordinary skill in the art at the time the invention was made to modify devices of the combination applied above as taught by MacFadyen and Venners because a device that transmits and receives on packet to and from one device before starting communication with the next device avoids collisions and improves system reliability by ensuring that the transmitted packet has been properly received by a device prior to communicating with another device (see MacFadyen, Col. 3, lines 44-60) and to assure that the first command of a sequence is properly executed before a second command (for another device is a sequence of devices) is transmitted to avoid conflict between commands (see Venners, col. 5 and abstract).

Regarding claim 9, Fischer's first packet includes (a) starting delimiter (SD) field 92 (i.e., a starting code) (see Col. 11, lines 66-68 and Col. 12, lines 11-65); (b) ID of the source node (SID) 108, which is a requestor address (see Col. 12, lines 34-39 and Col. 16, lines 21-23); (c) ID of the destination node (DID) 106, which is the requestee address (see Col. 12, lines 34-39 and Col. 16, lines 19-21); (d) length of the data field 100 (see Fig. 6; Col. 12, lines 52-56; and Col. 16, lines 25-30); (e) data field 100, which forms a message of control orders (see Col. 12, lines 26-28 and Col. 16, lines 36-37); (f) frame check sequence (FCS), which is an error checking

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code (see Col. 12, lines 28-32 and Col. 16, lines 37-39); and  
(g) an ending delimiter (ED) field 96 (see Col. 11, lines 66-68).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (US 5,008,879) in view of Madany (US 5,922,050) MacFadyen (US 5,101,191) and Venners (US 4855730) as applied above and further in view of Daum '405 (US007170405B2).

Daum discloses an analogous art appliance control method and apparatus with a return response packet as claimed in table 5, listed in cols. 6-7.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the combination applied above the claimed second packet protocol because this protocol is taught by Daub '405 as a known protocol for a slave appliance to respond to a request from a master appliance for bidirectional communication with improved data rates.

***Allowable Subject Matter***

7. Claim 11 is allowed.

***Response to Arguments***

8. Applicant's arguments with respect to claims 1-6 and 8-10 have been considered but are moot in view of the new ground(s)

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of rejection.

The 112 rejections have been overcome by applicant's response, but the arguments regarding the prior art are moot in view of the new grounds of rejection.

Applicant argues:

With respect to claim 8, the Examiner asserts that the specification fails to expressly support the following limitation: "wherein the second home appliance is not configured to transmit control commands to the first appliance.

But the above language was removed from claim 8 without showing the deletion using bracketing. If deletion was unintentional, the language should be restored to the claim. Otherwise, applicant is reminded to properly show changes to the claims as specified by rule 121.

#### **CONTACT INFORMATION**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edwin C. Holloway, III whose telephone number is (571) 272-3058. The examiner can normally be reached on M-F from 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Zimmerman, can be reached on (571) 272-3059.


The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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